**EXHIBIT A**

**PENDING CLAIMS IN U.S.
APPLICATION SERIAL NO. 09/893,746
AS OF AUGUST 20, 2003**

1. A method for directly delivering a substance into an intradermal space within mammalian skin comprising administering the substance through at least one small gauge hollow needle having an outlet with an exposed height between 0 and 1 mm, said outlet being inserted into the skin to a depth of between .3 mm and 2 mm, such that delivery of the substance occurs at a depth between .3 mm and 2 mm.

2. The method according to claim 1 wherein the delivered substance has improved pharmacokinetics compared to pharmacokinetics after subcutaneous injection.

3. The method of claim 1 wherein the administration is through at least one small gauge hollow needle.

4. The method of claim 1 wherein the needle has an outlet with an exposed height between 0 and 1 mm.

5. The method of claim 1 wherein injecting comprises inserting the needle to a depth which delivers the substance at least about 0.3 mm below the surface to no more than about 2 mm below the surface.

6. The method of claim 1 wherein administering comprises inserting the needle into the skin to a depth of at least about 0.3 mm and no more than about 2 mm.

7. The method of claim 2 wherein the improved pharmacokinetics is increased bioavailability of the substance.

8. The method of claim 2 wherein the improved pharmacokinetics is a decrease in $T_{max}$.

9. The method of claim 2 wherein the improved pharmacokinetics is an increase in $C_{max}$.

10. The method of claim 2 wherein the improved pharmacokinetics is a decrease in $T_{lag}$.

11. The method of claim 2 wherein the improved pharmacokinetics is enhanced absorption rate.

12. The method of claim 1 wherein the substance is administered over a time period of not more than ten minutes.

13. The method of claim 1 wherein the substance is administered over a time period of greater than ten minutes.

14. The method of claim 1 wherein the substance is a peptide or protein.

15. The method of claim 1 wherein the substance is administered at a rate between 1 nL/min. and 200 mL/min.

16. The method of claim 1 wherein said substance is a hormone.

17. The method of claim 14 wherein said protein or peptide is selected from the group consisting of insulin, granulocyte stimulating factor and PTH.

18. The method of claim 1 wherein said substance is a nucleic acid.

19. The method of claim 1 wherein the substance has a molecular weight of less than 1000 daltons.

20. The method of claim 1 wherein the substance has a molecular weight greater than 1000 daltons.

21. The method of claim 1 wherein said substance is hydrophobic.

22. The method of claim 1 wherein said substance is hydrophobic.

23. The method of claim 1 wherein the needle(s) are inserted substantially perpendicularly to the skin.

24. A method of administering a pharmaceutical substance comprising injecting or infusing the substance intradermally through one or more microneedles having a length and outlet suitable for selectively delivering the substance into the dermis to obtain absorption of the substance in the dermis.

25. The method of claim 24 wherein absorption of the substance in the dermis produces improved systemic pharmacokinetics compared to subcutaneous administration.

26. The method of claim 25 wherein the improved pharmacokinetics is increased bioavailability.

27. The method of claim 25 wherein the improved pharmacokinetics is decreased $T_{max}$.

28. The method of claim 25 wherein the improved pharmacokinetics is an increase in $C_{max}$.

29. The method of claim 25 wherein the improved pharmacokinetics is a decrease in $T_{lag}$.

30. The method of claim 25 wherein the improved pharmacokinetics is an enhanced absorption rate.

31. The method of claim 24 wherein the length of the microneedle is from about 0.5 mm to about 1.7 mm.

32. The method of claim 24 wherein the microneedle is a 30 to 34 gauge needle.

33. The method of claim 24 wherein the microneedle has an outlet of from 0 to 1 mm.

34. The method of claim 24 wherein the microneedle is configured in a delivery device which positions the microneedle perpendicular to skin surface.

35. The method of claim 24 wherein the microneedle needle is contained in an array of microneedles needles.

36. The method of claim 35 wherein the array comprises 3 microneedles.

37. The method of claim 35 wherein the array comprises 6 microneedles.

38. A microneedle for intradermal injection of a pharmaceutical substance, wherein the microneedle has a length and outlet selected for its suitability for specifically delivering the substance into the dermis.

39. The microneedle according to claim 38 wherein the length of the microneedle is from about 0.5 mm to about 1.7 mm.

40. The microneedle of claim 38 which is a 30 to 34 gauge needle.

41. The microneedle of claim 38 which has an outlet of from 0 to 1 mm.

42. The microneedle of claim 38 which is configured in a delivery device which positions the microneedle perpendicular to skin surface.

43. The microneedle of claim 42 which is in an array of microneedles needles.

44. The method of claim 43 wherein the array comprises 3 microneedles.

45. The method of claim 43 wherein the array comprises 6 microneedles.

46. A method for delivering a bioactive substance to a subject comprising: contacting the skin of the subject with a device having a dermal-access means for accurately targeting the dermal space of the subject with an efficacious amount of the bioactive substance.

47. The method of claim 46 wherein the pharmacokinetics of the bioactive substance is improved relative to the pharmacokinetics of the substance when administered subcutaneously.

48. The method of claim 47 wherein the improved pharmacokinetics is an increase in bioavailability.

49. The method of claim 47 wherein the improved pharmacokinetics is a decrease in $T_{max}$.

50. The method of claim 47 wherein the improved pharmacokinetics comprises an increase in $C_{max}$ of the substance compared to subcutaneous injection.

51. The method of claim 47 wherein the improved pharmacokinetics is a decrease in $T_{lag}$.

52. The method of claim 47 wherein the improved pharmacokinetics is an enhanced absorption rate.

53. The method of claim 46 wherein the device has a fluid driving means including a syringe, infusion pump, piezoelectric pump, electromotive pump, electromagnetic pump, or Belleville spring.

54. The method of claim 46 wherein the dermal access means comprises one or more hollow microcannula having a length of from about 0.5 to about 1.7 mm- mm.

55. The method of claim 46 wherein the dermal access means comprises one or more hollow microcannula having an outlet with an exposed height between 0 and 1 mm.

56. A method for delivering a bioactive substance to a subject comprising: contacting the skin of a subject with a device having a dermal-access means for accurately targeting the dermal space of the subject with an efficacious amount of the bioactive substance at a rate of 1nL/min. to 200 mL/min.

57. The method of claim 55 wherein the rapid onset pharmacokinetics of the bioactive substance is substantially improved relative to subcutaneous injection.

58. The method of claim 56 wherein the bioavailability is increased.

59. The method of claim 56 wherein the pharmokinetics is a decrease $T_{max}$.

60. The method of claim 56 wherein the pharmokinetics is an increased $C_{max}$.

61. The method of claim 56 wherein the pharmokinetics is a decreased $T_{lag}$.

62. The method of claim 56 wherein the pharmokinetics is an enhanced absorption rate.

63. The method of claim 55 wherein the dermal access means has one or more hollow microcannula that inserts into the skin of said subject to a depth of from about 0.5 to about - 2.0 mm.

64. The method of claim 55 wherein the dermal access means has one or more hollow microcannula having an outlet with an exposed height between 0 and 1 mm.

65. A method for administration of a substance to a mammal, the method comprising injecting the substance into the dermis of the mammal, wherein improved systemic absorption is produced relative to absorption produced upon injecting the substance subcutaneously and wherein the substance is a growth hormone, a low molecular weight heparin or a dopamine receptor agonist.

66. The method of claim 65 wherein the substance is a human growth hormone.

67. The method of claim 65 wherein the substance is a low molecular weight heparin.

68. (New ) The method of claim 65 wherein the substance is a dopamine receptor agonist.

69. The method of claim 65 wherein the substance is in the form of nanoparticles.

70. The method of claim 65 wherein the injecting is through at least one hollow needle, by electroporation, or by thermal poration.

71. The method of claim 70 wherein the injecting is through at least one hollow needle.

72. The method of claim 71 wherein the at least one hollow needle comprises an array of microneedles.

73. The method of claim 65 wherein the substance is administered by bolus injection.

74. The method of claim 73 wherein the substance is administered by repeated bolus injections.

75. A method for administration of a substance to a mammal, the method comprising selectively injecting the substance into the dermis of the mammal to obtain systemic absorption of the substance from the dermis, wherein the substance is a growth hormone, a low molecular weight heparin or a dopamine receptor agonist.

76. The method of claim 75 wherein selectively injecting the substance into the dermis is through at least one hollow needle, by electroporation or by thermal poration.

77. The method of claim 76 wherein selectively injecting the substance into the dermis is through at least one hollow needle having a length and outlet selected for their suitability for delivering the substance into the dermis to obtain systemic absorption of the substance from the dermis.

78. The method of claim 75 wherein the substance is a human growth hormone.

79. The method of claim 75 wherein the substance is a low molecular weight heparin.

80. The method of claim 75 wherein the substance is a dopamine receptor agonist.

81. The method of claim 75 wherein the substance is in the form of nanoparticles.

82. The method of claim 77 wherein the at least one hollow needle comprises an array of microneedles.

83. The method of claim 75 wherein the substance is selectively injected into the dermis to obtain improved systemic absorption compared to absorption produced upon subcutaneous administration of the substance.

84. The method of claim 75 wherein the substance is administered by bolus injection.

85. The method of claim 84 wherein the substance is administered by repeated bolus injections.

86. A method for administration of a substance to a mammal, the method comprising selectively injecting the substance into the dermis of the mammal, wherein systemic

absorption of the substance from the dermis is produced, and wherein the substance is a growth hormone, a low molecular weight heparin or a dopamine receptor agonist.

87. The method of claim 86 wherein selectively injecting the substance into the dermis is through at least one hollow needle, by electroporation or by thermal poration.

88. The method of claim 87 wherein the method comprises selectively injecting the substance into the dermis through at least one hollow needle having a length and outlet selected for their suitability for delivering the substance into the dermis.

89. The method of claim 86 wherein the substance is a human growth hormone.

90. The method of claim 86 wherein the substance is a low molecular weight heparin.

91. The method of claim 86 wherein the substance is a dopamine receptor agonist.

92. The method of claim 86 wherein the substance is in the form of nanoparticles.

93. The method of claim 87 wherein the at least one hollow needle comprises an array of microneedles.

94. The method of claim 86 wherein absorption of the substance in the dermis produces improved systemic absorption compared to absorption produced upon subcutaneous administration of the substance.

95. The method of claim 86 wherein the substance is administered by bolus injection.

96. The method of claim 95 wherein the substance is administered by repeated bolus injections.

97. A device for administering to a mammal, a composition which comprises a growth hormone, a low molecular weight heparin or a dopamine receptor agonist, the device being configured to selectively deliver the composition into the dermis to obtain systemic absorption of the composition, wherein the device is an electroporation injection system or a thermal poration injection system.

98. A device for administering to a mammal, a composition which comprises a growth hormone, a low molecular weight heparin or a dopamine receptor agonist, the device being configured to selectively deliver the composition into the dermis, wherein systemic absorption of the composition is obtained, and wherein the device is an electroporation injection system or a thermal poration injection system.

99. A method of administering a substance to a mammal, the method comprising selectively delivering the substance to the dermis to achieve improved systemic absorption as compared to systemic absorption produced upon bolus subcutaneous administration of the substance at an identical dose, wherein the substance is a growth hormone, a low molecular weight heparin or a dopamine receptor agonist.

100. The method of claim 99 wherein the substance is a human growth hormone.

101. The method of claim 99 wherein the substance is a low molecular weight heparin.

102. The method of claim 99 wherein the substance is a dopamine receptor agonist.

103. The method of claim 99 wherein the substance is in the form of nanoparticles.

104. The method of claim 99 wherein the delivering is through a hollow needle, by electroporation, or by thermal poration.

105. The method of claim 104 wherein the delivering is through at least one hollow needle

106. The method of claim 105 wherein the at least one hollow needle comprises an array of microneedles.

107. The method of claim 105 wherein the substance is administered by bolus injection.

108. The method of claim 107 wherein the substance is administered by repeated bolus injections.

109. A method for administering a substance to a mammal, the method comprising selectively delivering the substance to the dermis, wherein improved systemic absorption is

produced as compared to systemic absorption produced upon bolus subcutaneous administration of the substance at an identical dose, and wherein the substance is a growth hormone, a low molecular weight heparin or a dopamine receptor agonist.

110. The method of claim 109 wherein the substance is a human growth hormone.

111. The method of claim 109 wherein the substance is a low molecular weight heparin.

112. The method of claim 109 wherein the substance is a dopamine receptor agonist.

113. The method of claim 109 wherein the substance is in the form of nanoparticles.

114. The method of claim 109 wherein the delivering is through a hollow needle, by electroporation, or by thermal poration.

115. The method of claim 109 wherein the delivering is through at least one hollow needle.

116. The method of claim 115 wherein the at least one hollow needle comprises an array of microneedles.

117. The method of claim 109 wherein the substance is administered by bolus injection.

118. The method of claim 117 wherein the substance is administered by repeated bolus injections.